

Table of Contents

	Page
Abstract	(1)
Acknowledgements	(5)
Table of Contents	(6)
List of Tables.....	(10)
List of Figures	(12)
List of Abbreviations	(16)
 Chapter	
1. Introduction	1
1. Introduction	1
2. Overall aims	4
3. Specific aims	4
2. Review of Literature	6
1. Antioxidant.....	6
2. Inflammatory activity	8
2.1 Inflammation	8
2.2 Biological significance of nitric oxide.....	12
2.3 Monitoring NO production	15
2.4 Tumor necrosis factor-alpha (TNF- α)	17
2.5 Macrophages	18

Table of Contents (Continued)

	Page
3. Allergic activity	19
3.1 Allergy	19
3.2 Mast cells	21
4. General data of the plants in Prasaprophyai preparation	23
4.1 <i>Amomum testaceum</i> Ridl. or <i>Amomum krervanh</i> Pierre .. ex Gagnep.	23
4.2 <i>Anethum graveolens</i> L. or <i>Anethum sowa</i> Roxb. J.Fleming	25
4.3 <i>Angelica dahurica</i> Benth. or <i>Angelica dahurica</i> Benth. .. var <i>formosana</i> (Boiss.)	27
4.4 <i>Angelica sinensis</i> (Oliv.) Diels	29
4.5 <i>Artemisia annua</i> L.	31
4.6 <i>Atractylodes lancea</i> (Thunb.) DC. or <i>Atractylodes</i>	33
<i>chinensis</i> (DC.) Koidz.	
4.7 <i>Cuminum cyminum</i> L.	35
4.8 <i>Dracaena loureiri</i> Gagnep.	37
4.9 <i>Foeniculum vulgare</i> Mill. var. <i>dulce</i> (Mill.) Thell.	39
4.10 <i>Kaempferia galanga</i> L.	41
4.11 <i>Lepidium sativum</i> L.	43
4.12 <i>Ligusticum sinense</i> Oliv. cv. Chuanxiong or <i>Ligusticum</i> .. <i>chuanxiong</i> Hort.	45
4.13 <i>Mammea siamensis</i> Kosterm. or <i>Ochrocarpus</i>	47
<i>siamensis</i> T. And.	
4.14 <i>Mesua ferrea</i> L.	49
4.15 <i>Mimusops elengi</i> L. or <i>Mimusops elengi</i> var. <i>parvifolia</i> ... (R.Br.) H.J.Lam	51
4.16 <i>Myristica fragrans</i> Houtt.	53
4.17 <i>Nelumbo nucifera</i> Gaertn.	56
4.18 <i>Nigella sativa</i> L.	58

Table of Contents (Continued)

	Page
4.19 <i>Syzygium aromaticum</i> (L.) Merr. et Perry or <i>Eugenia</i> <i>caryophyllus</i> Bullock et Harrison	60
5. Biological activity of plants in Prasaprophyai	62
6. Chemical constituents of plants in Prasaprophyai	118
 3. Methodology.....	 141
1. Materials	141
1.1 Plant materials	141
1.2 Animal cell lines.....	143
1.3 Chemicals, reagents, instruments, plastics and glasswares	144
2. Methods	147
2.1 Preparation of plant extracts.....	147
2.2 Assay for antioxidant activity	148
2.3 <i>In vitro</i> assay for anti-inflammatory activity	149
2.4 <i>In vitro</i> assay for anti-allergic activity.....	151
2.5 Statistical analysis.....	152
 4. Findings and Results	 153
1. Preparation of plant extracts	153
2. Assay for antioxidant activity	156
2.1 DPPH radical scavenging assay	156
3. <i>In vitro</i> assay for anti-inflammatory activity	163
3.1 Assay for NO inhibitory effect	163
3.2 Inhibitory effects on LPS-induced TNF- α release from .. RAW 264.7 cells	172

Table of Contents (Continued)

	Page
4. <i>In vitro</i> assay for anti-allergic activity.....	175
4.1 Inhibitory effects on the release of β -hexosaminidase from RBL-2H3 cells	175
5. Conclusion and Recommendations.....	183
References.....	186
Appendix	
A. Chemical Reagents.....	212
B. Standard Curves.....	217
Vitae.....	219